

Project Profile

Synopsis: This element of the Besser Fishery Heritage Project develops a “vision” and conceptual plan for the Fishery Heritage Exhibit that will help assure that Besser Museum uses its resources and future grant funding to achieve its mission of fostering knowledge-based stewardship of the Great Lakes and their watersheds. The project deliverables include schematic renderings of the exhibit layout and a narrative of what visitors will experience and what learning tools and opportunities will be available to them as they travel through the exhibit, from the Native American Gallery, recreational fishing, and Great Lakes Stewardship Classroom, inside the Besser Museum building, along the walk way leading to the outdoor displays of a mid-20th Century commercial fishing vessel and a recently retired research vessel. The Narrative describes how these vessels will be used to tell the story of the collapse and recovery of Great Lakes fisheries and how research informs management in the wise stewardship of Great Lakes fisheries. Educational resources that will be available to students and educators are also described.

Project Title: North-east Michigan’s Great Lakes fishery heritage: a project to foster awareness of our heritage, share information and data about Great Lakes ecosystems, and enable better stewardship of Great Lakes aquatic ecosystems.

Grantee Organization: Besser Museum for Northeast Michigan

Project Team: Besser Museum Executive Director, Christine Witulski, Besser Museum Fishery Heritage Committee, James Johnson, Chair; Besser Museum *Katherine V* Committee, Clarence Cross, chair; Besser Museum Fishery Heritage Committees: Student Advisory Panel, Educator Advisory Panel, and Agency Advisory Panel. Partners include Michigan DNR and Michigan Sea Grant (Brandon Schroeder).

Contact Person: Christine Witulski, Executive Director, Besser Museum for Northeast Michigan

Grant Amount: \$10,000

Time Frame: April 20, 2017-July 15, 2018, including one 30-day no-cost extension for activity under contract to Good Design Group. Final report due date: July 15, 2018.

Focus Area: The Besser Museum Fishery Heritage Project will focus on educational opportunities in Great Lakes Stewardship, particularly on sustainable fisheries and related issues, while telling the story of Northeast Michigan’s fishery heritage and stewardship history and challenges of the upper Great Lakes.

Brief Project Summary: With this grant, Besser Museum for Northeast Michigan developed a Conceptual Plan and Narrative for how it will use its display assets (Native American Gallery, classroom, mounts of Great Lakes fishes, the 1928-Native American built commercial gillnetter *Katherine V*, and the recently retired DNR Research Vessel *Chinook*) in telling the story of Michigan’s fishery heritage. This story will include the vibrant commercial fisheries of the early 20th century, effects of overfishing and invasive species, collapse of Great Lakes fisheries, and how sea lamprey control and modern stewardship by resource agencies brought about a recovery of the fisheries. An important theme of the Narrative document is a description of how Besser Museum’s Fishery Heritage Display will engage students and general visitors as resource stewards and some of the learning tools that will be available,

particularly to students engaged in activities of the Northeast Michigan Great Lakes Stewardship Initiative, with which Besser Museum is partnering.

Project in Context

The Besser Museum Fisheries Heritage Project was conceived in the context of Lake Huron's recent (1992-2004) fish community regime shift <https://onlinelibrary.wiley.com/doi/abs/10.1577/T07-141.1> , which included most prominently explosive invasions by dreissenid mussels and round goby, collapse of the invasive alewife, dramatic decline in the introduced Chinook salmon https://www.michigan.gov/documents/LakeHuronNewEcosystem-foodweb_122463_7.pdf , recovery of self-sustaining populations of walleye and, most recently, rise in lake trout reproduction https://www.researchgate.net/publication/279204604_Rehabilitation_Stocking_of_Walleyes_and_Lake_Trout_Restoration_of_Reproducing_Stocks_in_Michigan_Waters_of_Lake_Huron The most important commercial species, lake whitefish, is in steep decline, caused by falling reproduction success. These changes caused resource agencies to drastically "retool" their fisheries programs https://www.michigan.gov/documents/LH-Management-Times-ChangFINAL_133120_7.pdf , an ongoing process to the date of this report. Thus, those visiting the Besser Fishery Heritage Display have experienced a period of almost unprecedented change in Lake Huron's aquatic ecosystem. Some have seen cherished and economically valuable fisheries (Chinook salmon) almost disappear while new fishing opportunities have developed or are in the planning stages. These changes challenge long-standing resource use and employment opportunities while opening others. Besser Museum's Fishery Heritage Program will serve to help stakeholders to understand the causes of change, how resource agencies are working to stabilize the fish community and develop new fishery opportunities, and how today's anglers and museum visitors in general can help by engaging in activities and behaviors that will contribute to the better stewardship of Lake Huron. Our targeted audience is therefore all museum visitors with the hope of encouraging a better understanding of, and responsibility as stewards for, our Great Lakes fisheries and aquatic ecosystems. We will focus in particular on students and educators by collaborating with Michigan Sea Grant and the Northeast Michigan Great Lakes Stewardship Initiative to offer educational and stewardship opportunities as well as learning tools that target STEAM curriculum in K-12 schools. One example will be our formatting and sharing of data collected by the *RV Chinook* so that students, along with general audiences, can explore how the data document change; for example: lake trout abundance-sea lamprey relationships, decline in Chinook salmon condition factor (and how to calculate that parameter) as alewife biomass declined, and comparative weight-length relationships of Chinook, lake trout and walleye as alewife biomass declined.

Goals

Develop a project plan to guide the process of using Museum resources and GLFT funds so as to propose a multi-tiered exhibit, learning tools, and interpretative, inquiry welcoming, layered messaging designed to meet three outcomes:

1. Visitors will leave with a better awareness of what constitutes sustainable fisheries based upon the history and science that have shaped today's Great Lakes fish communities and their recreational and commercial fisheries;

2. Visitors will gain enhanced knowledge, attitudes, and skills needed for them to contribute more effectively to sustainable fisheries;
3. Visitors will make choices and contribute leadership to better sustain fisheries in the Great Lakes.

Results

We retained Good Design Group <http://www.gooddesigngroup.com/> to assist us in defining and communicating our vision for the Fishery Heritage Display, to produce conceptual drawings and renderings of our vision of the display, and to help us draft the Exhibit Narrative, based upon a more comprehensive narrative drafted by the Museum's Fishery Heritage Committee.

Products and resources

The Renderings and Narrative can be viewed at the Besser Museum web page <http://www.bessermuseum.org/visions-fisheries-heritage-2018> and are provided as attachments. In addition, Good Design Group developed a budget for interpretative materials and equipment needed during the buildout of the display, as described in the conceptual renderings, also given as an attachment. The Drawings and Conceptual Renderings and Exhibit Narrative were reviewed by the Besser Museum Board of Trustees on May 15, 2018. The Board unanimously approved the plans in their entirety on that date. The Chair of the Fishery Heritage Committee presented draft renderings and vision of the Fishery Heritage Display to the staff and leadership of the Michigan Office of the Great Lakes during their visit to Besser Museum on October 25, 2017, and with teachers engaged with the BWET "Our Fisheries, Our Future" teacher training program at Besser Museum on May 23, 2018. In addition to the plan, the BWET group discussed learning tools the project could provide, for example Great Lakes data sets collected by the *RV Chinook* that could be formatted and shared for use in math, science, and writing projects. The Fisheries Heritage Committee Chair is scheduled to present the Conceptual Plan to the June meeting of the Friends of the NOAA Thunder Bay National Marine Sanctuary in June 2018. The Conceptual Plans will likewise be shared with our principal partner agencies, including FWS, Great Lakes Fishery Commission, USGS Great Lakes Science Center, and Chippewa-Ottawa Resource Authority (or its successor). The *Katherine V* project, principally through work of volunteers, has nearly reached completion <http://www.bessermuseum.org/katherine-v>, although there still remain many opportunities to develop message, interpretative tools, and other signage. Besser Museum has received a grant from the Cook Family to refurbish its Native American Gallery and, in turn, the Native American Gallery Project welcomes the opportunity to collaborate with the Fishery Heritage Project to help us begin, sequentially in time, the Fishery Heritage story with the Northeast Michigan Native American fishing experience. Together we hope to tell of the importance of fishing to the nutrition and culture of Native families of Northeast Michigan during the pre-Columbian period as well as during and after European settlement to present day.